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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/795,850	03/08/2004	Tomohiro Oshiyama	KOT-0091	1242
23413	7590	02/02/2010	EXAMINER	
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22nd Floor			1794	
Hartford, CT 06103				
NOTIFICATION DATE		DELIVERY MODE		
02/02/2010		ELECTRONIC		

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TOMOHIRO OSHIYAMA, HIROSHI KITA,
and YOSHIYUKI SUZURI

Appeal 2009-002854
Application 10/795,850
Technology Center 1700

Decided: January 29, 2010

Before ALLEN R. MACDONALD, *Administrative Vice-Chief Patent Judge*, KAREN M. HASTINGS, and MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

HASTINGS, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from the Examiner's decision to reject claims 1-7 and 9-12. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

Appellants' invention relates to an organic electroluminescent element having a specified host compound to provide increased luminance and lifetime of the electroluminescent element (*e.g.*, top of Spec. 13; *see also* host compound labeled TCBP1 as illustrated at Spec. 17).

Claim 1 is illustrative (emphasis added):

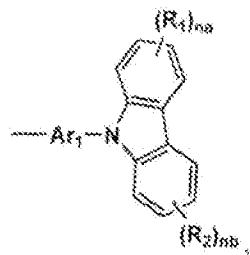
1. An organic electroluminescent element comprising a light emission layer containing a host compound and a phosphorescent compound, the host compound having *reorganization energy of from more than 0 to 0.50 eV*, wherein the reorganization energy is energy in the process in which the host compound changes to the anion radical, and calculated employing Gaussian 98, wherein the host compound is represented by Formula I below,

Formula 1:



wherein X_1 represents a chemical bond; n represents an integer of 2; and A_1 represents a group represented by the following Formula 2 below, provided that plural A_1 s may be the same or different;

Formula 2:



wherein X_1 represents a substituted phenylene group *having a substituent in an ortho position relative to the chemical bond*; and R_1 and R_2 independently represent a hydrogen atom or a substituent; and na and nb independently represent an integer of from 1 to 4.

Independent claim 10 includes all of the same elements as recited in claim 1 as well as a few additional features (claim 10, *see also* App. Br. 3).

The Examiner has rejected claims 1-7 and 9-12 under 35 U.S.C. § 103 as obvious over Thompson (US 6,920,830, issued on June 7, 2005).

II. DISPOSITIVE ISSUE

The dispositive issue before us is: have Appellants shown that the Examiner erred in failing to:

- (a) properly construe the reorganization energy range “of from more than 0 to 0.50 eV” as recited in claims 1 and 10, as well as
- (b) properly consider the Appellants’ rebuttal evidence of unexpected results?

We answer this question in the affirmative, and, thus, cannot sustain the Examiner’s rejection of claims 1-7 and 9-12 under 35 U.S.C. § 103.

III. FINDINGS OF FACT

Appellants state that the prior art included the use of a carboxyl derivative “such as CBP” as the host compound (Spec. 4, second paragraph).

Appellants’ Specification describes that it is important that the “reorganization energy . . . be small as compared to a conventional host CBP” (bottom of Spec. 12; *see also* top of Spec. 13). Appellants’ Specification also regards CBP as a comparative compound, and not within the inventive compounds, with a host energy of 0.56 eV (Spec. 52, Table 1; Spec. 54, Table 3). Tests comparing the properties of a comparative example of CBP to an inventive example of TCBP1, among others, are illustrated in Appellants’ Specification (*e.g.*, Spec. 52, Table 1; Spec. 54, Table 3).

Appellants rely upon a declaration filed under 37 C.F.R. 1.132 (App. Br., Evidence Appendix IX) (hereinafter “the Oshiyama declaration”) to show that their host compounds, which have a reorganization energy within the range of “more than 0 to 0.05 eV”, and which also have a “substituted phenylene group having a substituent in an ortho position” as claimed, exhibit an unexpected improvement in emission luminance and emission lifetime characteristics over both CBP as well as over a compound that differs from the claims only in that the phenylene group has a substituent in a meta versus an ortho position relative to the chemical bond.

According to Appellants, these unexpected results are evidence of nonobviousness, which the Examiner has not properly considered.

Specifically, Appellants point out that the Examiner is incorrect in stating that the reorganization energy of both comparative Examples C-1¹ and C-2² of the Oshiyama declaration are encompassed by reorganization energy range in each of the present claims (e.g., Reply Br. 5, 7-9).

The Examiner fails to provide any cogent analysis or discussion with respect to the Oshiyama declaration since she has misinterpreted the scope of each of claims 1 and 10 to include a host reorganization energy greater than the upper limit of 0.50 eV as recited in each of claims 1 and 10 (*see generally* Ans. 6-7).

¹C-1 exemplifies the CBP compound of Thompson (App. Br. 7).

²C-2, also referred to as Compound C, exemplifies a compound with the substitution on a meta versus “an ortho position” as required in each of claims 1 and 10.

IV. PRINCIPLES OF LAW

During examination, claim terms must be given their broadest reasonable construction consistent with the Specification. *In re ICON Health and Fitness, Inc.*, 496 F.3d 1374, 1378-79 (Fed. Cir. 2007).

“After a prima facie case of obviousness has been made and rebuttal evidence submitted, all the evidence must be considered anew.” *In re Eli Lilly & Co.*, 902 F.2d 943, 945 (Fed. Cir. 1990) (citing *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984)); *Piasecki*, 745 F.2d at 1472 (“Prima facie obviousness is a legal conclusion, not a fact. Facts established by rebuttal evidence must be evaluated along with the facts on which the earlier conclusion was reached, not against the conclusion itself.”) (citations omitted); *see also* Manual of Patent Examining Procedures (MPEP) § 716.01(d) (8th Ed. rev. 6 Sept. 2007).

V. ANALYSIS

As correctly contended by Appellants, the Examiner has not properly construed the claim, since the Examiner has stated that the claimed range of “more than 0 to 0.50 eV” encompasses a reorganization energy of 0.56 eV as well as 0.58 eV (App. Br. 10; Reply Br. 5, 7-8). Thus, it is unreasonable to interpret the claimed range of “more than 0 to 0.50 eV” to include values above 0.50 eV as this would render the upper limit provided as meaningless. Accordingly, the Examiner has not properly construed the claims. It follows that the Examiner has not properly evaluated and considered Appellants’ showing of unexpected results.

Furthermore, the Examiner’s finding that since “Thompson has the same host compound as required by the present claims . . . it would be expected that the reorganization energy . . . [would] be the same” (Ans. 7) is

flawed because Appellants' evidence that exemplifies host compounds within the genus of those described in Thompson (that is, C-1 and C-2 of the declaration) do not have a reorganization energy as claimed.

Whether the claimed invention would have been obvious cannot be determined without properly considering evidence attempting to rebut the prima facie case. However, the Examiner's analysis of the Oshiyama declaration evidence, and of the prior art, is based on a flawed claim construction. Accordingly, Appellants have established error due to the Examiner's failure to properly construe the claim and, thus, consider anew the prima facie case based on this proper claim construction in light of the Oshiyama declaration evidence. Therefore, the rejection cannot be sustained.

VI. CONCLUSION

On the record before us, we do not sustain the rejection of claims 1-7 and 9-12 under 35 U.S.C. § 103 over Thompson maintained by the Examiner.

VII. DECISION

The decision of the Examiner is reversed.

REVERSED

Appeal 2009-002854
Application 10/795,850

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